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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/873,716	06/04/2001	Julie Ann Valentine	35010/127	4953

32827 7590 05/21/2003

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EXAMINER
DICKENS, CHARLENE

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/873,716	Applicant(s) VALENTINE, JULIE ANN	
	Examiner Ex. Dickens	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence addr ss --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *10* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2-19-03 has been entered.

2.The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 20-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 20 and 30 it is not clear what structure receives the estimated carbon content factor or the carbon-tp-steam ratio. Also what structure(s) process the mass flow rate. The last paragraph of the respective claims is very confusing. Due to the confusion it is not clear what structure(s) interconnects with the flowmeters. In claims 21 and 22, is "a mass of carbon" included in "the estimated carbon"?

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 20-25, 28-35, 38, and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Suggitt et al. Suggitt et al. (Figs. 1, 2) discloses a flow metering system/method for use in controlling a reformation reaction in a hydrogen production system, said flow metering system comprising: a first flowmeter 38 configured to measure a mass flow rate of a hydrocarbon feedstock 12 from a hydrocarbon feedstock supply and to produce a hydrocarbon flow rate signal representing said mass flow rate of said hydrocarbon feedstock; a second flowmeter 38 configured to measure a flow rate of steam from a steam supply 20 and to produce a steam flow rate signal representing said flow rate of said steam; and a controller 36 configured to receive said hydrocarbon flow rate signal and said steam flow rate signal, to receive an estimated carbon content factor, said estimated carbon content factor being based on at least one potential constituent of said hydrocarbon feedstock (col. 11, lines 24-40), to process said mass flow rate of said hydrocarbon feedstock and said estimated carbon content factor to determine an estimated carbon

content of said hydrocarbon feedstock, to receive a carbon-to-steam ratio for said hydrogen production system (col. 11, lines 55-67 - col. 12, lines 1-5), and to process said estimated carbon content of said hydrocarbon feedstock, said flow rate of said steam, and said carbon-to-steam ratio to control at least one of said flow rate of said steam and said flow rate of said hydrocarbon feedstock (col. 12, lines 6-15);

Claims 21, 22, 31, 32: Suggitt et al. discloses wherein said estimated carbon content factor is based on a mass of carbon for said at least one potential constituent of said hydrocarbon feedstock (col. 12, lines 6-15);

Claims 23, 33: Suggitt et al. discloses wherein said controller is configured to: select said estimated carbon content factor from a range of carbon content factors for said hydrocarbon feedstock (col. 12, lines 2-4);

Claims 24, 34: Suggitt et al. discloses wherein said estimated carbon content factor comprises a predetermined constant value for said at least one potential constituent of said hydrocarbon feedstock (col. 9, lines 49-52);

Claims 25, 35: Suggitt et al. discloses wherein said controller is configured to: process measured process conditions to improve the estimate of said estimated carbon content factor (col. 11, 59-61);

Claims 28, 38: Suggitt et al. discloses said hydrogen production system that comprises a Steam Reformation of Hydrogen (SRH) system (col. 1, lines 10-17);

Claims 29, 39: Suggitt et al. discloses a first valve 42 coupled to said controller and configured to control flow of said hydrocarbon feedstock responsive to instructions from said controller; and a second valve 42 coupled to said controller and configured to control flow of said steam responsive to instructions from said controller.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 26, 27, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suggitt et al. in view of Gaisford. Claims differ from Suggitt et al. with the recitation of meters that are Coriolis flowmeters. Gaisford discloses Coriolis flowmeters can be used in a hydrogen production system (col. 8, lines 23, 24) for the purpose of measuring the density of a mixture (col. 8, line 22). It would have been obvious to one having ordinary skill in the art at the

time the invention was made to have Coriolis flowmeters in Suggitt et al. as taught by Gaisford for the purpose of measuring the density of a mixture (col. 8, line 22).

8. Applicant's arguments filed 2-19-03 have been fully considered but they are not persuasive. Applicant argues Suggitt does not teach nor suggest receiving an estimated carbon content factor or determining an estimated carbon content of a hydrocarbon feedstock. Specifically, that Suggitt determines the heat content of a hydrocarbon stream, but not the carbon content. The Examiner disagrees with this argument. Suggitt does not specifically state receiving an estimated carbon content factor or determining an estimated carbon content of a hydrocarbon feedstock. Nevertheless, Suggitt provides a system that produces a gas mixture of carbon dioxide and hydrogen which in turn is purified to produce high purity hydrogen and a mixture of impurities which are rejected. In order for Suggitt to produce high purity hydrogen, the system must calculate the amount of carbon contained in the hydrocarbon mixture. Applicant goes on to argue Suggitt never mentions a carbon content of the feed-gas, and consequently cannot teach a carbon-to-steam ratio. Again, as stated above Suggitt is capable of computing a carbon content; and because of this computation is also capable of determining a carbon-to-steam ratio. Then argument, too is not persuasive. Finally, applicant argues Suggitt does not teach nor suggest

controlling a flow rate based on the carbon-to-steam ratio. This argument is not found persuasive either. Suggitt has a controller 36 that evaluates the flow rates of the entire system. Suggitt goes on to state the flow rates are continually evaluated and adjusted, i.e., controlled, to provide a partial oxidation feed gas steam. Accordingly, Suggitt clearly teaches and suggests the claimed invention. All other arguments are deemed to be fully addressed with the new grounds of rejection given above.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dickens or the supervisor, Edward Lefkowitz, whose telephone numbers are (703) 305-7047 or 305-4816, respectively. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist or the customer service representative whose telephone numbers are (703) 308-0956 or (703) 308-4800 respectively. The fax numbers are (703) 305-3431 and (703) 305-3432.

EDWARD LEFKOWITZ
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cd/dickens
May 19, 2003